

**Notice of Allowability**

Application No.

10/560,678

Applicant(s)

DE BOER ET AL.

Examiner

Khai M. Nguyen

Art Unit

2819

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/14/2005 (preliminary amendment).
2. ☒ The allowed claim(s) is/are 1-6.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
August 2, 2007  
Khai M. Nguyen - Art Unit: 2819  
571-272-1809

## DETAILED ACTION

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

- a. The word "**means**" in the title has been changed to read --**Laser driver**--.
- b. The continuation data has been inserted at the top of page 1 (below title – see examiner's amendment attached).
- c. The phrase "**Prior Art**" has been added to **Figures 2 and 3**.

### *Allowable Subject Matter*

2. Claims 1-6 are allowed. The following is an examiner's statement of reasons for allowance: the references of record neither anticipate nor render obvious the recited combinations including: cyclic multiplexing or selecting a number of data levels corresponding to desired intensity levels of the light; de-multiplexing the analog signal into a set of analog signals in synchronization with the multiplexing the number of data levels; temporarily storing the set of analog signals; and selecting the stored set of analog signals for generating a drive signal for the light generator.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Contact Information***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khai M. Nguyen whose telephone number is 571-272-1809. The examiner can normally be reached on 9:00 - 5:30 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rexford (Rex) Barnie can be reached on 571-272-7492. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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Voice: 571-272-1809

This is an examiner's amdt.

### Laser driver

Means/method for generating a laser drive signal

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8/1/07 { This application is a 371 of PCT/IB04/50916, which has an international filing date of June 16, 2004, designating the United States of America, and claims the benefit of European Patent Application 03076914.5 filed June 19, 2003.

### FIELD OF THE INVENTION

The invention relates in general to a driver for driving a light generator, and more particularly to a laser driver for driving a laser. The invention also relates to an optical recording apparatus comprising a laser driver for writing information into an optical storage medium, more particularly but not necessarily exclusively an optical storage disc. Further, the invention relates to a method for driving a light generator, such as a laser. Hereinafter, the present invention will be mainly explained for the case of an optical recording apparatus having a laser and a laser driver. It is however emphasized that the invention is not to be regarded to be limited to an optical recording apparatus or to the use of an optical disc. An optical recording apparatus is often indicated as "optical disc drive".

### BACKGROUND OF THE INVENTION

As is commonly known, an optical storage disc comprises at least one track, either in the form of a continuous spiral or in the form of multiple concentric circles, of storage space where information may be stored in the form of a data pattern. Optical discs may be read-only type, where information is recorded during manufacturing, which information can only be read by a user. The optical storage disc may also be a writable type, where information may be stored by a user. For writing information in the storage space of a writable optical storage disc, an optical disc drive comprises, on the one hand, rotating means for receiving and rotating an optical disc, and on the other hand light generating means for generating an optical beam, typically a laser beam, and for scanning the storage track with said laser beam. Since the technology of optical discs in general, and the way in which information can be stored in an optical disc, is commonly known, it is not necessary here to describe this technology in great detail. For understanding the present invention, it is sufficient to mention that the laser beam is modulated such as to cause a pattern of locations where properties of the disc material have changed, such pattern corresponding to coded information. Generally, the laser drive signal is a digital signal. During recording an optical disc the laser driver controls the laser by a drive current. This drive current, and consequently the light emitted by the laser, follows a desired pattern. In fact the drive current is modulated

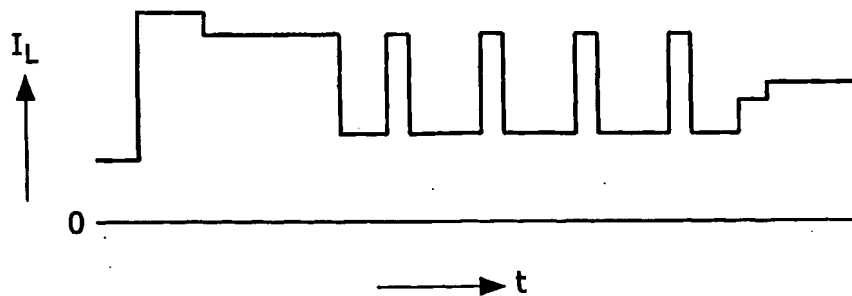


FIG. 1

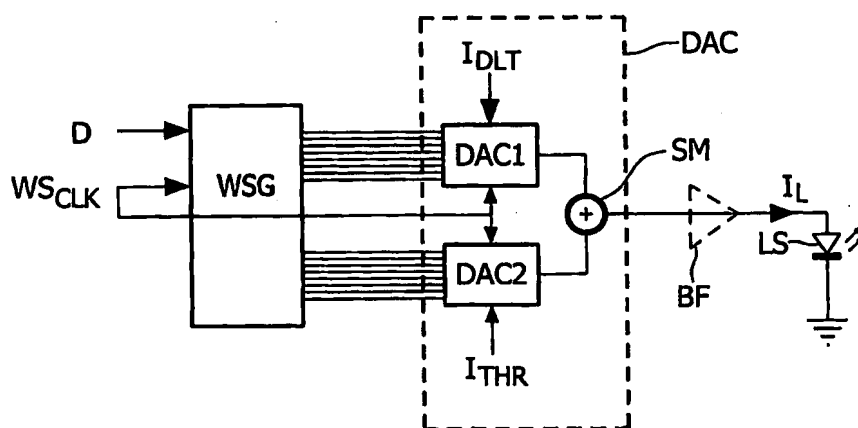


FIG. 2

Prior Art

2/3

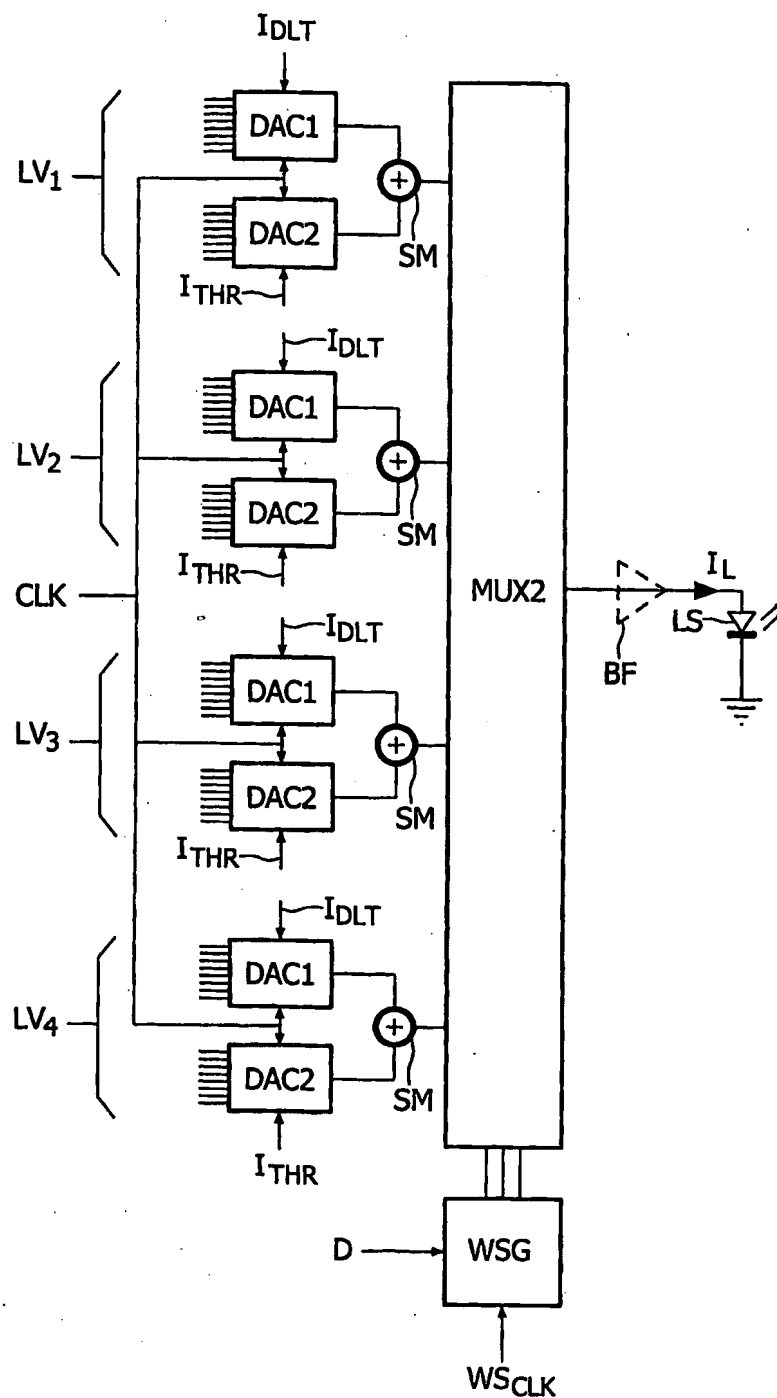


FIG. 3

Prior Art